Google Summer of Code

Introduction

What is Google Summer of Code?

- Google Summer of Code (GSoC) is a global program that matches students up with **open source**, free software and technology-related organizations to write code and **get paid** to do it!
- The organizations provide **mentors** who act as guides through the entire process, from learning about the community to contributing code. The idea is to get **students** involved in and familiar with the open source community and help them to put their summer break to good use.
- This program has brought together thousands of students and mentors from over 118 countries worldwide. As of November 2019, 686 open source projects, from areas as diverse as operating systems and community services, have participated as mentoring organizations for the program.

Goals of GSoC

- Get more open source code written and released for the benefit of all.
- Inspire young developers to begin participating in open source development.
- Help open source projects identify and bring in new developers.
- Give open source organizations the freedom to try new ideas.

Benefits for the Students

- Accepted students gain exposure to real-world software development and employment opportunities in areas related to their academic pursuits.
- The fact that you get to write code that people from all over the world can use - how cool is that!
- Successful students have widely reported that their participation in GSoC made them more attractive to potential employers and that the program has helped greatly when embarking on their technical careers.
- A crash course on soft skills and communication.

Am I Good Enough ?
The Technical Skills

- Even if you have little experience in programming, it is *possible* to get accepted in GsoC. Note however that this is not the common case.
- The common case is that you have to be good to get accepted in a GSoC project. Not crazily good, but competent enough in what you're interested in.
- The important thing to remember is that what matters is how good you actually are at **coding**. That is, grades, previous experience etc. only matter if you have produced quality code because of them (and of course, if you have produced quality code without having those, that’s totally ok).

Am I Good Enough ?
The Soft Skills

- The soft skills are greatly underrated unfortunately. However, they're some of the most important skills for a software engineer not only for GSoC but in general. They span multiple areas:
- You understand that trust, responsibility and communication and the ability to cultivate those are some of the most important assets for a developer.
- You find out where to go for help with technical questions.
- You take and respond well to feedback.
- You can work independently.
- You know when to ask questions.

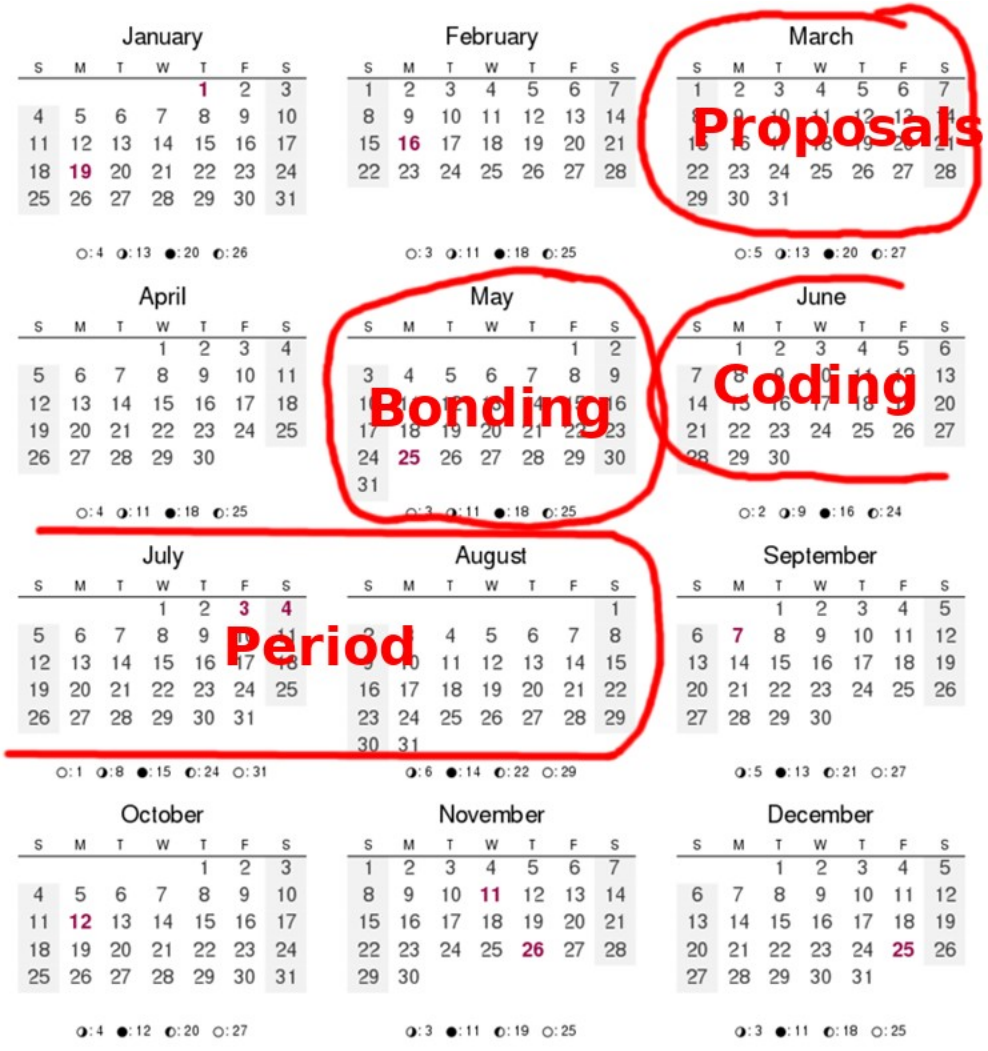
Procedure

Google Summer of Code 2020 Timeline

Date	Event
2019	
December 9	Program announced
2020	
January 14 19:00 UTC	Mentoring organizations can begin submitting applications to Google
February 5 19:00 UTC	Mentoring organization application deadline
February 5 - February 19	Google program administrators review organization applications
February 20 18:00 UTC	List of accepted mentoring organizations published
February 20 - March 16	Potential student participants discuss application ideas with mentoring organizations
March 16 18:00 UTC	Student application period begins
March 31 18:00 UTC	Student application deadline
April 14 18:00 UTC	Student slot requests due from Org Admins
April 23 18:00 UTC	Student Project selections due from Org Admins
April 27 18:00 UTC	Accepted student projects announced
Community Bonding Period	Students get to know mentors, read documentation, get up to speed to begin working on their projects
May 18	Coding officially begins!

The Procedure in a Nutshell

- First of all, be sure to check the **GSoC timeline** often to be sure you haven't missed anything!
- **In a nutshell:**
  - Organizations put out some projects that students can do at about end of **February**.
  - You communicate with orgs and eventually apply for some projects at the end of **March**.
  - At the start of **May**, the accepted students are announced.
  - Up to the end of May, there's the bonding period with the organization.
  - Then, from **June to August** is the coding period, in which for 3 months, you work on your project.
  - At the end of each month, you get money and a review.


January
February
March
April
May
June
July
August
September
October
November
December
Proposals
Bonding
Coding
Period

The Procedure

- For you, everything starts when the **project ideas** are announced.
- Every organization that has been picked by Google to participate in GSoC provides a list of **project ideas**. Every project idea is a project proposed to be completed by a single student in a period of 3 months.
- For every project idea, there is **one or more mentors** that have decided to help the student that gets accepted complete the project.
- In your part, there's one thing to do and you have to do it well: **The Proposal**.

The Procedure (cont’d)

- Starting off, you have to spend some time **browsing through all the organizations** and their project ideas to see what interests you.
- **Be aware!** It takes a reasonable amount of time to be done effectively. We’d say, about 1 week. And **do that early!**
- Another thing to remember is that because an organization’s main topic is not in your interests, it doesn’t mean that it won’t have any project ideas that are in fact in your interests.

Getting Involved in the Community

- Once you found the project ideas that are interesting to you, start **getting involved in the community**.
- One way to do that is to start posting in IRC, Slack, forum or whatever way this project's contributors are communicating. Depending on the project, one or all of these might be high-traffic but it’s worth trying for multiple reasons.
- Another way is to start communicating with the mentors of the ideas that you’re interested in. Maybe send an email making it clear that you’re interested in the specific project idea.
- As you'd expect**, soft skills** are very important at this point!

What is the Point of the First Interaction?

- Ideally, after some time of communicating, the goal is that they think **“he’s one of us”** and you **“I belong here”**.
- However, note that you should **be honest**. That is, accept the fact that you may very well not be one of them and vice versa. That’s ok, there are many other organizations out there. Certainly, both in the first contact but also in the whole duration of GSoC, we’d strongly advise you to never “fake” anything (both for ethical and practical reasons).

An Effective First Contact

- Here are some general guidelines to keep in mind when you initiate communication with the project. Either by contacting a mentor privately or posting in some kind of public forum / chat.
- Be **polite**. That’s obvious but you never know..
- Be unambiguous, clear and **to the point**. That is, state clearly why you’re sending this email (the title by itself should make it clear).
- Be **proactive**. That is, actively help the interaction move forward. Read the description of the project idea carefully so that you know what you're talking about. Make “to the point” questions. Ask him how could you get started with it. Ask him what kind of knowledge do you need.
- Be **concise**. Don’t overdo it but when in doubt, opt for conciseness especially in the first contact.

After the First Contact

- After the first contact and assuming it was good, the rest of the procedure is quite different depending on the organization.
- There are 3 main things to do from now on:
  1) **Keep contact** with them so that they don't forget you.
  2) **Work in something** related to your idea. This first of all helps you get familiar with the project and second, it helps you build trust. You show that you can actively help in a project (or at least that you have enough potential to do so).
  3) Plan **your course of action**. Start thinking what is the best way to solve the problem, how you can make a specific roadmap, what are the difficulties / struggles etc.
  4) Specifically, try to **anticipate** as many **struggles** as you can in order to ask for help early, so that you have them solved in the proposal.

Multiple Organizations

- You have **up to 3 proposals**.
- Basically, you should think wisely. A strong advise is to not **compromise quality.** That is, it probably won’t serve you well if you have a mediocre contact with 3 organizations rather than having a strong one with 1 organization.

The Proposal

- The time has come to do your proposal. **I assume**, again, that you have built a strong connection with the org. That you have a very good understanding of your project idea, its difficulties, struggles etc. That you can communicate with your mentor and that you have familiarity with the project.
- A **proposal's job** is to **convince the organization** about 2 things:
- **That the project idea is worth it.**
- **That you're the best fit for it.**
- Your first step is to **start preparing a proposal before the submissions open** in order to get advantage of the **draft proposals**.

The Proposal (cont’d)

- In the next couple of slides we will see an example proposal provided by Google that you find here. Using it, I will try to point out why it is good and what are the important parts.
- This is a template proposal but I recommend that you read actual ones too.
- Konstantin Käfer's Application for Summer of Code 2006 is one of my favorites.

The Proposal (cont'd)

"Database Abstractions" By Kanika Vats, Systers, 2009

Abstract

Systers use GNU mailing list manager Mailman2 which currently uses Python pickle files to store its data. Systers moderators have customized it to make use of PostgreSQL database. They make use of raw SQL statements and python db-api which makes the code :

- Dependent on the existing database
- Reduces the efficiency and maintainability

Current Problems

The project idea aims at making the code :

Independent of the database by making the use of python classes and objects to interact with the database rather than direct SQL statements.

- This will be achieved with the help of an ORM (Object Relational Mapper). Storm will be our choice of ORM.
- Also, Systers aim at bringing this feature upstream and incorporating this feature in the yet to be released version - Mailman3 (which will switch to use a database) - so that the open source world can benefit themselves with the addition of this feature.

Thus, mapping existing schemas of the Systers database to an object oriented paradigm and determination and incorporation of necessary modifications in the database needs to be done so that it fits cleanly and nicely into Mailman3's Architecture.

The Proposal (cont'd)

Proposal Timeline

Before April 20:

- To familiarize myself completely with Mailman2's functionality and architecture.
- Study of the customized files of Systers Mailman available in the Launchpad Baazar version control.
- To familiarize myself with Storm(ORM that we will be using)

April 20 – May 23 (Before the official coding time):

- To do self coding with Storm to improve my further understanding and ease of use with this ORM and database(PostgreSQL)
- During this period I will remain in constant touch with my mentor and the Mailman community. I will remain active on IRC and Mailing lists to discuss and finalize on the modifications (if any) that needs to be on existing schemas and design of new schemas (if needed to fit cleanly with Mailman3's Architecture)
- Thus with the help of my mentor I will become absolutely clear about my future goals,the final database implementations that need to be done as well as the approach that I will follow to map the schemas to the Object Oriented Paradigm.

May 23 – June 18 (Official coding period starts):

- Define all the required Relations(Tables) in my local database using STORM.
- Define all the corresponding Python Classes and Objects that will store,modify and retrieve data in database.
- Define all the interactions that Systers perform with their database (virtualize or stimulate all interactions) in STORM that will deal with my local database.

This will help in testing of the proper working of the entire basic code changes that we will later on incorporate in Systers Source code.

The Proposal (cont'd)

June 18 – July 5:

- Bringing about the decided changes in the Relational Schemas of Systers database.
- Replacing parts of the above code in their respective places in the Systers source code. (This should not take much time as most of the functionality has been implemented in the previous step).
- Testing the overall working of each and every module of the modified source code with the help of Python Test Suites.

JULY 6th MID TERM EVALUATION

July 6 – July 15:

- Making further changes in the code to improve the Functionality, Exception handling, Bug Removal.

July 15 – July 25:

- To be in constant touch with the Mailman3's developers and to let them know about our progress.
- Most of the time will be consumed for rigorous testing and bug fixes.

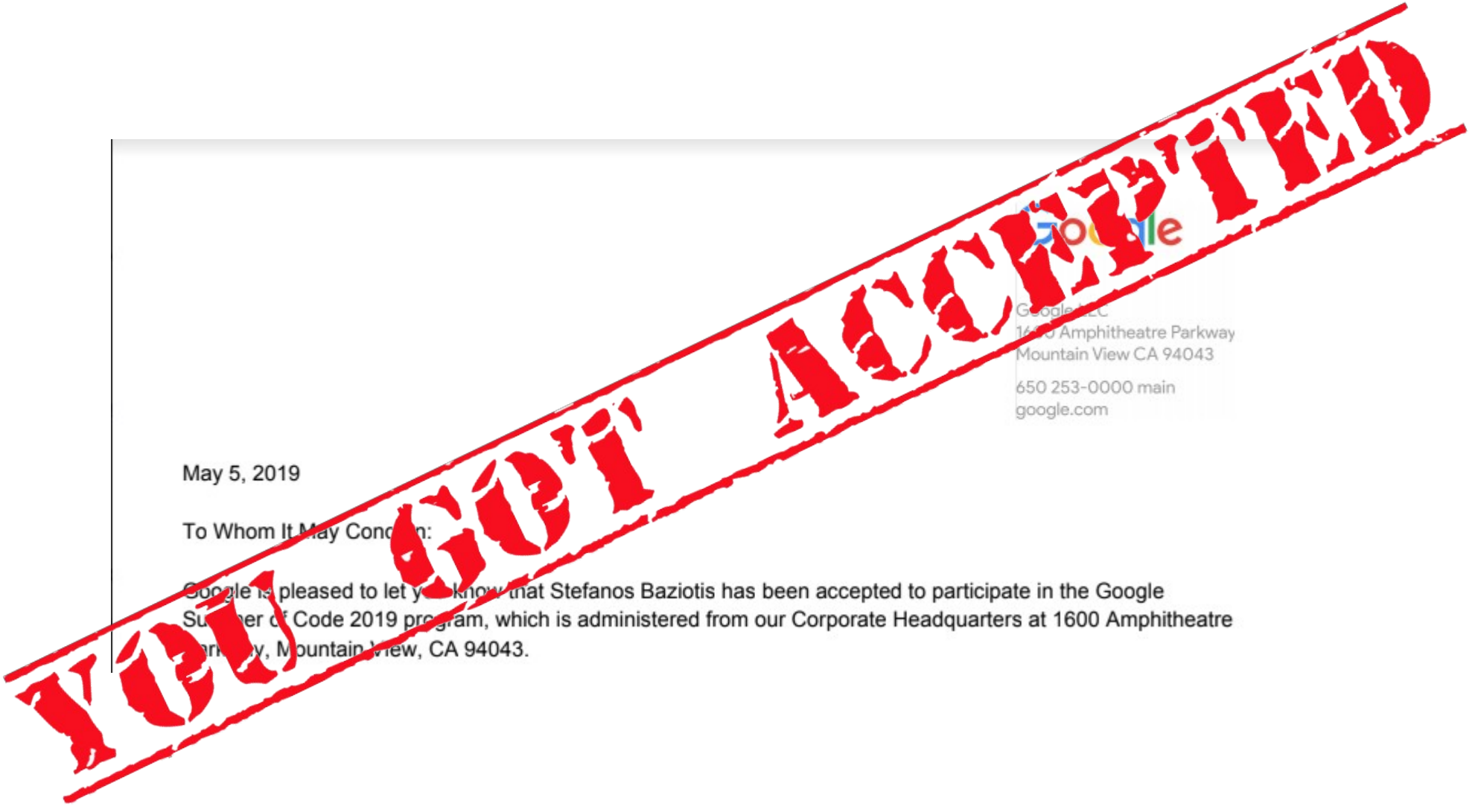
July 25 – July 31:

- For Documentation

A buffer of two weeks has been kept for any unpredictable delay.

The Proposal (cont’d)

- **Warning!**: Google example proposals miss a biography. Always include a description of yourself in a CV-like manner but possibly less formal.
- You can find other layouts and many more proposals with simple Google search.
- My advice is: **Understand the sub-communication**.
- The proposal should **scream why this project is beneficial to the community.**
- Also, it should be pretty obvious that you have thought this thing through. This includes a very well thought course of action and a quite specific roadmap.
- Basically, after seeing your proposal for 10 seconds, you want the reader to think: “Ok, this person knows how to do the thing we need without giving us much trouble” (again, back to the "he's one of us").



Google

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May 5, 2019

To Whom It May Concern:

Google is pleased to let you know that Stefanos Baziotis has been accepted to participate in the Google Summer of Code 2019 program, which is administered from our Corporate Headquarters at 1600 Amphitheatre Parkway, Mountain View, CA 94043.

You Got Accepted!

- Get excited because it really is amazing.
- Before we get too excited though, let’s see what follows.
- After the announcement of the accepted students is what is called the **community bonding period**.
- It is also the time to **acquire all the important knowledge that you may be missing** and **try to anticipate any difficulties in your project**.

The Coding Period

- After the community bonding period ends, the GSoC starts officially! It is called **the coding period**.
- From now on, you're expected to get sh*t done according to your roadmap.
- The **coding period is split into 3 months**.
- After each month, there's an **evaluation**. The evaluator (which is your mentor(s)) judges you based on whether in the passed month you did what you were expected to do.
- If you **pass** a month's evaluation, you get $$ and continue working. Otherwise, you're out of the program. :)
- Other than the money, a passed evaluation is another way to say "you're doing great!".

The Coding Period (cont’d)

- The most important thing during this period is **to have fun and learn**!
- I really can’t re-iterate that enough. Take all the advice that you can, ask questions, exceed your and your mentor’s standards. This is the time to do all that and even more.
- If possible, get in contact with the rest of the community (if you haven’t already) and **be a part of the bigger picture**.
- Moreover, if you get the chance, **communicate with other students**. Either from the same organization or not.

The Coding Period (cont’d)

- In the coding period, you want to have constant communication with your mentor according to what you have agreed upon.
- Also, be sure that you generally get positive feedback from the rest of the community.

Advice

Use **public communication** as much as possible!

Thank you!

Thank you!

Questions?